

**Natural Resources Conservation Service  
Conservation Practice Standard**

**Prescribed Burning**

**Code 338 (Acre)**

**DEFINITION**

Applying controlled fire to a predetermined area.

**PURPOSES**

- Maintain or restore desired plant community
- Improve wildlife habitat
- Improve forage production quantity and/or quality
- Enhance seed and seedling production
- Facilitate distribution of grazing animals

**CONDITIONS WHERE PRACTICE APPLIES**

On pastureland, hayland, wildlifeland, or natural area, as appropriate.

**CRITERIA**

General Criteria Applicable to All Purposes

A written burn plan must be developed by a qualified individual. The burn must be conducted under the supervision of a qualified individual. Certification under the Ohio Certified Prescribed Fire Manager Program is recommended. Prescriptions and parameters set in the burn plan must be followed.

The procedure, equipment and number of trained personnel shall be adequate to accomplish the intended purpose as stated in the burn plan.

The expected weather conditions, human and vehicular traffic that may be impeded by heat or smoke, liability, safety and health precautions shall be integrated into the timing, location and expected intensity of the burn.

Timing of burning will be commensurate with soil and site conditions to maintain site productivity and minimize effects on soil erosion and soil properties (structure, soil moisture).

Comply with applicable laws and regulations, including Ohio Open Burning Regulations and ODNR-Division of Forestry restrictions.

Access to the burn area by unauthorized persons will be restricted.

Burning will be conducted only during daylight hours; ignition should be completed by 3 p.m. Time the burn so that mop-up operations are completed before sunset.

Site Specific Criteria Applicable to All Purposes

Firebreaks shall be utilized to contain the area to be burned. Mechanical, chemical, wetline, burned or natural firebreaks will be used alone or in combination to contain the burn.

Soil moisture shall be sufficient to protect root crowns and ensure plant regrowth. Soil shall be moist to wet to touch.

Burning shall not be conducted on organic soils or sites with slopes in excess of 35%.

Fuel shall be sufficient to achieve the burn objectives. Fine fuel moisture shall be 10-25%.

Weather conditions will be monitored both in advance of and at the time of the burn. Contact with the weather service must be made at least 24 hours in advance of the burn. Postpone the burn if conditions are outside the prescription contained in the burn plan.

Relative humidity will be between 25 and 70 percent; 30 to 60 percent is preferred.

Winds will be steady from 5 to 15 miles per hour. Burns will not be conducted when there are gusty winds over 20 miles per hour and/or winds shifting greater than 45 degrees from the prevailing direction.

Burns will not be conducted if a temperature inversion (which reduces dissipation of smoke) is present.

Air temperatures will be between 40 and 80 degrees Fahrenheit; 60 to 70 degrees Fahrenheit is preferred.

Criteria to Maintain or Restore Desired Plant Community

Specify the plant community desired including important species, physical structure, species composition and density. Identify the type of burn that will maximize those conditions.

Frequency of burning will be dependent on the present condition, desired species and plant community response. Burns may be conducted as frequently as annually, if needed for undesirable species control or to maintain the desired plant community.

The timing of the burn will depend on the desired species; a burn just as the target species is breaking dormancy is most effective. For deciduous tree control, the burn should be conducted just as the trees have fully leafed out.

Criteria to Improve Wildlife Habitat

Specify the target wildlife species for management, the desired plant species, and possible non-target wildlife species of concern that may be affected.

Determine the ideal grass stand characteristics (density, species, structure, amount of litter) that benefit the animal species for which the area is being managed and plan the burn to achieve those stand characteristics,

Burn before or just as the desired plant species has broken dormancy in the spring. For most warm season grasses in Ohio, burns are most effective from mid-March to early April.

The frequency of burning should be no more than one burn every four or five years. More frequent burns may be needed if tree invasion is a significant problem.

Where limited grassland habitat exists, only 1/3 to 1/2 of the area should be burned in any one year. Very large grass stands may also be burned in blocks comprising 1/3 to 1/2 of the area.

Criteria to Improve Forage Production Quantity and/or Quality

Specify the plant species to be managed for forage production and any undesirable plant species needing to be controlled.

Frequency of burning should be no more than once every four years, to stimulate vigor and production of warm-season grasses.

Burn before or just as the desired plant species has broken dormancy in the spring. For most warm season grasses in Ohio, burns are most effective from mid-March to early April.

Criteria to Facilitate Distribution of Grazing Animals

Key grazing areas and key species should be adjusted in relation to grazing responses.

Frequency of burning will be based on extent and duration of grazing responses, but typically should be no more than once every four years.

Burn before or just as the desired plant species has broken dormancy in the spring. For most warm season grasses in Ohio, burns are most effective from mid-March to early April.

Protect the area from grazing until the growth of key species has reached 10-12 inches.

Criteria to Enhance Seed and Seedling Production

Specify the species that is being managed for seed or seedling production.

Frequency of burns should be that which maximizes seed/seedling production. For most warm season grasses, annual burns will provide the most production.

Burn before or just as the desired plant species has broken dormancy in the spring.

**CONSIDERATIONS**

Burning is not meant to be an annual management practice. The burn must be conducted to meet a specific resource management objective. For typical Ohio conditions, burns are needed only every 3-4 years.

Burning should be managed with consideration for wildlife needs such as nesting, feeding, and cover. Burning should not occur between April 15 and August 1 where negative impacts to ground nesting birds are likely. Burning only part of the area in any one year may protect important habitat.

Existing barriers such as lakes, streams, wetlands, roads, and constructed firebreaks are important to the design and layout of this practice. The presence of wooded draws, woody/shrubby fencerows, snags or debris piles must be noted as they may affect fire behavior.

Notify adjoining landowners, local fire departments and public safety officials within the airshed prior to burning.

Consider cultural resources and threatened and endangered plants and animals when planning this practice. Cultural resources may be protected through the use of firebreaks. Sensitive plants and animals may be protected through appropriate timing of the burn or by limiting the area burned to allow escape.

Carbon release should be minimized by the timing and burn intensity.

Consider the location of utilities such as electric power lines and natural gas pipelines to prevent damage to the utility and avoid personal injury. The carbon in thick smoke may allow electricity to arc across overhead electrical lines.

Reducing the fuel height to about 1-foot next to the fire line greatly reduces the intensity of the fire at the fire line. Removing snags and brush piles near firebreaks helps prevent fires from escaping or spotting over.

#### Additional Considerations for Smoke Management Planning

Smoke impacts should be considered before the burn and monitored during the burn. If possible, conduct burns so that smoke is carried away from roads and highways, occupied residences, high population areas or airports.

Stagnant high-pressure systems usually cause problems with smoke dispersion and burning under those conditions should be avoided when smoke management is critical. Most fires have an active burning period and a residual period. Wind directions during both periods must be carefully considered.

Scheduling burns during good dispersion conditions or burning at slower rates (burning smaller or narrower strips or smaller areas) increases the dilution of smoke. Burning at slower rates may mean burning later into the evening. Usually, a morning burn has improving rates of ventilation; an evening burn generally faces deteriorating ventilation conditions.

Emissions can be reduced by more completely consuming the fuel during the active burning period which allows more smoke to be entrained in the convection column. This minimizes the inefficient smolder phase of the prescribed fire. Scheduling fires when duff and larger fuels are too wet to burn also reduces emissions.

When smoke management is critical, burn when conditions are good for rapid dispersion of smoke. The atmosphere should be somewhat unstable (enhanced vertical motion) so that the smoke will rise and dissipate, but not so unstable as to be problematic in controlling the burn.

Residual smoke associated with smoldering larger slash or brush fuels can cause serious visibility problems, especially at night, if not carefully planned. This should be eliminated during the mop-up phase, if possible.

#### **PLANS AND SPECIFICATIONS**

A written burn plan will be prepared by qualified individuals. Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan, or other acceptable documentation. All necessary permits and approvals must be obtained before implementation of the practice.

As a minimum, a burning plan will include:

- Description of the burn area including present vegetation cover.
- Objective and timing of burn.
- Acceptable conditions for prescribed burn.
- Preparation of the area for burning.

- Equipment/personnel needs/safety requirements.
- Special precaution areas.
- Firing technique.

#### **OPERATION AND MAINTENANCE**

The kinds and expected variability of site factors (e.g., fuel conditions and moisture content, weather conditions, human and vehicular traffic that may be impeded by heat or smoke, liability and safety and health precautions) shall be monitored during the operation of this practice. Sufficient fire suppression equipment and personnel shall be available commensurate with the expected behavior of these factors during the time of burning to prevent wildfire or other safety, health or liability incident.

Maintenance shall include monitoring of the burned site and adjacent areas until such time as ash, debris and other consumed materials is at pre-burn temperatures.

#### **REFERENCES**

Higgins, K. F., A. D. Kruse and J. L. Piehl. 1989. Prescribed burning guidelines in the northern Great Plains. U. S. Fish and Wildlife Service Publication EC760. 36 pp.

Missouri Department of Conservation. Prescribed Burning Manual.

Stritzke, R. 1996. Conducting a prescribed burn on warm season grass CRP sites. Nebraska Cooperative Extension publication NF 96-268.

Kindled fires. Chapter 1503.18 of the Ohio Revised Code (view at <http://onlinedocs.andersonpublishing.co/revisedcode/> )

Open burning standards. Chapter 3745-19 of the Ohio Administrative Code (view at <http://onlinedocs.andersonpublishing.co/oac/> )

<b>Practice Documentation For:</b>	<i>Prescribed Burning - 338</i>
<b>The following documentation must be in the case folder or engineering subfolder.</b>	
<b>Practice Planning</b>	
<ol style="list-style-type: none"> <li>1. Is the practice part of a conservation plan?</li> <li>2. Have the purpose(s) for the practice been identified?</li> <li>3. Is the location of the practice identified on a map or plan drawing?</li> </ol>	
<b>Practice Design</b>	
<p>Have the following design criteria been addressed?</p> <ol style="list-style-type: none"> <li>1. Preparation of burn plan</li> <li>2. Species to be controlled or benefited</li> <li>3. Intensity of burn</li> <li>4. Smoke management concerns</li> <li>5. Special precaution areas</li> <li>6. Acres planned including rotation or division of area to be burned</li> </ol>	
<b>Practice Installation / Application</b>	
Does the practice meet the minimum criteria for the planned purpose(s)?	
<p>Have the following criteria been documented in the assistance notes or practice jobsheet ?</p> <ol style="list-style-type: none"> <li>1. Size and boundaries of area actually burned</li> <li>2. Type and relative amount of vegetation burned</li> <li>3. Effectiveness of burn</li> <li>4. Site monitored until pre-burn temperatures restored</li> </ol>	
<b>Practice Deficiencies</b>	
If applicable, have the practice deficiencies been communicated with the decisionmaker?	
<b>Practice Maintenance</b>	
<p>Have the following maintenance actions been communicated to the decisionmaker?</p> <ol style="list-style-type: none"> <li>1. Monitor plant growth following fire to determine response or additional management needs</li> </ol>	
<b>Other Comments:</b>	